I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: MS Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: _____ Signature: _____

Docket No.: 511582001111
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Daniel E. H. AFAR, et al.

Application No.: 10/807,635

Art Unit: 1642

Filed: March 23, 2004

Examiner: Catherine Joyce

For: NOVEL 13-TRANSMEMBRANE PROTEIN EXPRESSED IN PROSTATE CANCER

DECLARATION OF JEAN M. GUDAS, Ph.D.

UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I, Jean M. Gudas, declare as follows:

1. I am currently Director, Antibody Development at Agensys, Inc., in Santa Monica, California. I am responsible for supervising the generation of antibodies to targets identified at Agensys for antibody-based diagnosis and therapy in cancer. I have extensive experience in scientific matters related to oncology and antibody development and have been practicing in this field for almost 20 years. I received my Ph.D. in Public Health/Environmental Health Sciences from UCLA in 1985. A copy of my *curriculum vitae* is attached as Exhibit A.

2. The above-referenced application has claims directed to methods of inhibiting growth or survival of cancer cells that express the 24P4C12 protein. The Examiner has alleged that the application fails to enable one of ordinary skill in the art to make and use the claimed invention.

3. We conducted experiments wherein human androgen-dependent prostate cancer xenograft LAPC-9 AD tumor cells (3.0×10^6 cells) were injected subcutaneously into male SCID mice. The mice were randomized into groups (n=10 mice in each group) and treatment initiated intraperitoneally (i.p.) on day 0 with therapeutic monoclonal antibodies ("MAbs") directed to 24P4C12 antigen named Ha5-3(1,4)7.1, Ha5-3(1,4)2, Ha5-3(3,5)37.1, and Ha5-1(5)2, respectively or control MAb as indicated. Animals were treated twice weekly for a total of 5 doses, with the last treatment given on day 18. Tumor growth was monitored using caliper measurements on indicated days.

4. The results in Exhibit B show that MAb Ha5-1(5)2 statistically and significantly inhibited the subcutaneous growth of human prostate cancer xenograft LAPC-9AD in SCID mice ($p< 0.01$).

5. In another experiment, human colon cancer xenograft HT-29 tumor cells (1.0×10^6 cells) were injected subcutaneously into male SCID mice. The mice were randomized into groups (n=10 mice in each group) and treatment initiated intraperitoneally (i.p.) on day 0 with MAbs directed to 24P4C12 named Ha5-4(2,5)34.1 and Ha5-3(1,4)2 respectively or control MAb as indicated. Animals were treated twice weekly for a total of 6 doses with the last treatment on day 16. Tumor growth was monitored using caliper measurements on indicated days.

6. The results in Exhibit C show that MAbs Ha5-4(2,5)34.1 and Ha5-3(1,4)2 statistically and significantly inhibited the subcutaneous growth of human colon cancer xenograft HT-29 in SCID mice ($p < .01$ and $p < 0.05$ respectively).

7. Based on the foregoing, I conclude that MAbs directed to the 24P4C12 protein are shown to inhibit the growth or survival of cancer cells that express the 24P4C12 protein.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Executed at Santa Monica, California, on 15 May 2006.

Jean M. Gudas

CURRICULUM VITAE

Jean M. Gudas, Ph.D.

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AREAS OF EXPERTISE

Antibody directed cancer therapies
Signal transduction pathways
Tumor-host cell interactions

EDUCATION:

1975 B.S. *Magna cum laude*, Microbiology, University of Rhode Island, Kingston, R.I.
1977 M.S. Microbiology, Oklahoma University Health Sciences Center, Oklahoma City, OK
1982 MPH Public Health, Environmental Health Sciences, University of California, Los Angeles, CA
1985 Ph. D Public Health, Environmental Health Sciences, University of California, Los Angeles, CA

POSTDOCTORAL TRAINING:

1985 to 1991 Postdoctoral Research Fellow, Division of Cell Growth and Regulation, Dana Farber Cancer Institute, Boston, MA.

PROFESSIONAL EXPERIENCE:

1977 to 1978	Research Assistant, Department of Hematology, City of Hope National Medical Center, Duarte, CA Early gene therapy efforts on Gaucher's disease
1978 to 1979	Staff Research Associate, Department of Gastroenterology, Wadsworth VA Hospital, Los Angeles, CA Regulation of type II drug metabolizing enzymes
1979 to 1980	Research Associate, Genex Corp., Gaithersburg, MD Regulatory pathways/enzymes for detoxification of environmental pollutants

1991 to 1996 Senior Staff Fellow, National Cancer Institute, Division of Cancer Treatment, Bethesda, MD

- Examined role(s) and signaling pathways controlled by proto-oncogenes c-myb, MDM2 and tumor suppressor genes BRCA1, p53, and $p21^{CIP1/Waf1}$ in breast cancer genesis and progression
- Studied contribution of oncogenes and loss of tumor suppressor genes to chemotherapeutic drug resistance
- Directed and supervised research activities of M.D. Oncology Fellows, visiting scientists, research technicians, graduate and summer students
- Organized inter-departmental group seminars and outside speakers
- Subcommittee to design and implement breast cancer prevention strategy and program at NCI

1996 to 2001 Research Scientist I- III, Amgen Inc., Cancer Biology Dept. Thousand Oaks, CA

- Directed research efforts using DNA microarrays and other technologies to identify and validate molecular targets in cancer- discovered novel cyclin E2
- Directed project to study the role of Vitamin D receptor in regulating breast and prostate cancer cell differentiation
- Led screening efforts to identify inhibitors of nuclear receptors
- Identified and studied role of Aldo Keto Reductase genes in drug resistance
- Initiated efforts to map and distinguish signal transduction pathways controlled by the EGF, Her2/neu and c-met receptors
- Directed and coordinated all efforts including screening, biochemical and cell-based assays and animal models to identify and validate antibodies that blocked the function of a tyrosine kinase growth factor pathway – a human inhibitory antibody to this target will likely to enter clinical trials in early 2003
- Represented Cancer Biology department on company-wide oncology strategy task force, leukemia working group and product licensing teams.
- Conceived and implemented strategy to developed CHO cell line with improved yields of mammalian proteins- All mammalian proteins at Amgen are now produced using this strain.
- Lead scientist on Amgen due diligence scientific evaluation teams that resulted in licensing of CD22 with Immunomedics and acquisition of Kinetix

2001- 2003: Scientist II-Senior Scientist, Abgenix Inc., Fremont, CA

- Lead scientist on four internal and one collaborative oncology antibody project in areas relating to tumor hypoxia, angiogenesis, growth control and tumor specific cell surface membrane proteins.

- Lead scientist in evaluating and implementing company platform for antibody drug conjugates- Coordinated strategies and assays for selecting and optimizing antibody mediated drug delivery *in vitro* and *in vivo*
- Coordinated research efforts with outside collaborator that led to 2001 IND and patent filing for Muc18 antibodies to treat metastatic melanoma
- Designed and managed animal studies with outside contractor(s) to support IND filings for two antibody therapeutics
- Wrote Pharmacology section of IND for ABX-MA1 IND filing
- Coordinated research efforts with outside collaborator that led to IND and patent filing for ABX-IL8 in the oncology setting
- Coordinated and managed patent filings for four proprietary antibodies for treating human cancers
- Proposed, reviewed and chaperoned 7 new cancer antibody targets through Antigen Sourcing Team and Oncology Therapeutic Area Team review processes
- Member of Lexicon, Curagen, Immunotoxin and Intracellular drug delivery subteams
- Coordinated scientific efforts of Oncology Therapeutic Area Team
- Coordinated oncology collaborations with academic groups

2003- Present: Director, Antibody Development, Agensys Inc., Santa Monica, CA

- Direct all internal efforts to generate murine and human hybridomas and evaluate their functions in vitro and in vivo

AREAS OF TECHNICAL EXPERTISE:

Cell Biology

Established cell based screening platform for high throughput assay of nuclear receptors
Culture of primary, normal, immortalized and tumorigenic human breast and prostate epithelial cells
DNA transfections
Cell fusions and hybridoma generation
Cell synchronization
FACS analyses
Immunocytochemistry
Bioassays for proliferation, transformation and differentiation
Retrovirus construction and infection of cells
Primary and secondary cytotoxicity assays
Cell-based migration and invasion assays for tumor and endothelial cells
In vivo xenograft tumor models for multiple cancer targets

Antibody generation and screening

Molecular Biology

DNA microarrays and clustering analysis
RNA analyses including nuclear run-on transcription assays, Northern blots, primer extension, RNAse protection assays and reverse transcription PCR analyses
Gene cloning
DNA analyses including Southern blot hybridizations and PCR amplification
Routine procedures including DNA sequencing, restriction enzyme digestion, gel electrophoresis, subcloning and construction of expression vectors

Protein Analyses

Western, immunoblot and immunoprecipitations
Baculovirus protein expression systems

TEACHING EXPERIENCE:

1975 to 1977	Teaching Assistant in Microbiology, University of Oklahoma Health Sciences Center
1981 to 1983	Teaching Assistant and Lecturer, University of California, Los Angeles School of Public Health
1991 to 1995	Mentoring of medical fellows, graduate and summer students in their laboratory research projects at NCI

AWARDS and HONORS:

1971 to 1974	Rhode Island State Scholarship recipient Dean's list, all semesters
1974 to 1975	Honors Program, University of Rhode Island
1975	Mortar Board National Honor Society
1975 to 1977	Graduate Assistantship Program, Oklahoma University Health Sciences Center
1975 to 1977	Graduate Assistantship Program, Oklahoma University Health Sciences Center
1980 to 1982	U.S. Public Health Traineeship, UCLA School of Public Health
1983 to 1985	Individual Predoctoral Fellowship Award, Associated Western Universities
1987 to 1991	Individual National Research Service Award-NCI

PROFESSIONAL SOCIETIES:

Women in Cancer Research
American Association for the Advancement of Science
American Society of Microbiology
American Association for Cancer Research

PROFESSIONAL ACTIVITIES:

DOD National Breast Cancer Integration Panel Member-1999
Chairperson- Basic Biology Session, Basic and Clinical Aspects of Breast Cancer, 1997 Keystone Meeting
Reviewer- DOD Army Breast Cancer Program 1996- 2000
Co-organizer Washington, D.C. Regional Cell Cycle Interest Group
Co-organizer NCI Breast Biology Interest Group
Co-organizer of NCI Medicine Branch Seminar series
Ad hoc reviewer for Int. J. Cancer Res., Cancer Res., Mol. Carcinogenesis, Cancer Letters and Biochem. Biophys. Acta and Oncogene

PUBLICATIONS:

Dale, G. L., **J. M. Gudas,** W. Woloszyn and E. Beutler. Electrophoresis of glucocerebrosidase from normal and Gaucher's disease fibroblasts. Amer. J. Hum. Genet. **31**: 518, 1979.

Glaumann, H., **J. M. Gudas,** N. Kaplowitz and C. Von Bahr. Inhibition of hepatic metabolism of azathioprine by furosemide in human liver *in vitro*. Biochem. Pharmacol. **29**: 1439, 1980.

Karenlampi, S. O., D. F. Montisano, **J. M. Gudas** and O. Hankinson. DNA-mediated restoration of aryl hydrocarbon hydroxylase induction in a mouse hepatoma mutant defective in nuclear translocation of the *Ah* receptor. Arch. Toxicol. Suppl. **9**: 159-162, 1986.

Gudas, J. M. and O. Hankinson. Intracellular localization of the *Ah* receptor in Hepa-1 cells. J. Cell. Physiol. **128**: 441-448, 1986.

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Knight, G. B., **J. M. Gudas** and A. B. Pardee. Cell-cycle-specific interaction of nuclear DNA-binding proteins with a CCAAT sequence from the thymidine kinase gene. Proc. Natl. Acad. Sci. USA. **84**: 8350-8354, 1987.

Gudas, J. M. and O. Hankinson. Regulation of cytochrome P-450c in differentiated and dedifferentiated rat hepatoma cells: Role of the *Ah* receptor. Som. Cell Genetics. **13**: 513-528, 1987.

Knight, G. B., **J. M. Gudas** and A. B. Pardee. Protein and RNA synthesis and degradation in growth regulation. *In*: Gene Expression and Regulation: The Legacy of Luigi Gorini. Bissell, Deho, Sironi and Torriani, Eds. (Elsevier Sciences Pub. B.V.) 1988.

Karenlampi, S. O., C. Levgraverend, **J. M. Gudas**, N. Carramanza and O. Hankinson. A third genetic locus affecting the *Ah* (dioxin) receptor. J. Biol. Chem. **263**: 10111-10117, 1988.

Gudas, J. M., G. B. Knight and A. B. Pardee. Nuclear posttranscriptional processing of thymidine kinase mRNA at the onset of DNA synthesis. Proc. Natl. Acad. Sci. USA. **85**: 4705-4709, 1988.

Knight, G. B., **J. M. Gudas** and A. B. Pardee. Coordinate control of S phase onset and thymidine kinase expression. Jpn. J. Cancer Res. **80**: 493-498, 1989.

Gudas, J. M., G. B. Knight and A. B. Pardee. The cell cycle and restriction point control. *In*: The Regulation of Proliferation and Differentiation in Normal and Neoplastic Cells. E.I. Frei, Ed. (Academic Press, San Diego), p3-20, 1989.

Fridovich-Keil, J., **J. M. Gudas** and Q.-P. Dou. Regulation of gene expression in late G1: What can we learn from thymidine kinase? *In*: Perspectives on Cellular Regulation: From Bacteria to Cancer. M. Inouye and J. Campisi, Eds. (Wiley-Liss Inc.), p265-277, 1991.

Fridovich-Keil, J., **J.M. Gudas**, I.B. Bryan and A.B. Pardee. Improved expression vectors for eukaryotic promoter/enhancer studies. Biotechniques **11**: 572-579, 1991.

Fridovich-Keil, J., **J. M. Gudas**, Q.-P. Dou, I. Bryan and A. B. Pardee. Genetic analysis of DNA sequences determining growth-responsive expression of the murine thymidine kinase gene. Cell Growth and Differ. **2 :** 67-76, 1991.

Gudas, J. M., G. B. Knight and A. B. Pardee. Ordered splicing of thymidine kinase pre-mRNA during the S phase of the cell cycle. Mol. Cell. Biol. **10**: 5591-5595, 1990.

Gudas, J.M. Transcription initiation and temporal expression of thymidine kinase mRNA in Chinese hamster cells. Biochem. Biophys. Res. Comm. **184:** 908-914, 1992.

Gudas, J.M., J. Fridovich-Keil, M.W. Datta, J. Bryan and A.B. Pardee. Molecular characterization of the murine thymidine kinase gene and analysis of transcription start site heterogeneity. Gene **118:** 205-216, 1992.

Gudas, J.M., J.L. Fridovich-Keil and A.B. Pardee. Posttranscriptional control of thymidine kinase mRNA accumulation in cells released from G0/G1 phase blocks. Cell Growth & Differ. **4:** 421-430, 1993.

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Bradley, D.W., J.L. Fridovich-Keil, **J.M. Gudas** and Pardee, A.B. Serum-responsive expression from the murine thymidine kinase promoter is specifically disrupted in a transformed cell line. Cell Growth & Differ. **11**: 1137-1143, 1994.

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Gudas, J.M., M. Oka, F. Diella, J. Trepel and K.H. Cowan. Expression of wild-type p53 during the cell cycle in normal human mammary epithelial cells. Cell Growth & Differ. **5**: 295-304, 1994

Wosikowski, K., R.W. Robey, J.T. Regis, M. Alvarez, **J.M. Gudas** and S.E. Bates. Normal p53 status and function in drug resistant human breast cancer cells. Cell Growth & Differ. **6:** 1395-1403, 1995.

Goldsmith, M.E., **J.M. Gudas,** E. Schneider, and K.H. Cowan. Wild-type p53 stimulates expression from the human multidrug resistance promoter in a p53-negative cell line. J. Biol. Chem. **270**: 1894-1898, 1995.

Gudas, J.M.*, D. Katayose*, H. Nguyen, S. Srivasta, K.H. Cowan and P. Seth. Cytotoxic effects of Adenovirus-mediated wild-type p53 protein expression in normal and tumor mammary epithelial cells. Clin. Cancer Res.**1**: 889-897, 1995.
* Both authors contributed equally.

Gudas, J.M., R. Klein, M. Oka, and K.H. Cowan. Posttranscriptional regulation of *c-myb* in estrogen receptor positive breast cancer cells. Clin. Cancer Res. **1**: 235-243, 1995.

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Gudas, J.M., H. Nguyen, T. Li, D. Hill and K.H. Cowan. Effects of cell cycle, wild-type p53 and DNA damage on $p21^{CIP1/Waf1}$ expression in human breast epithelial cells. Oncogene **11**: 253-261, 1995.

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Gudas, J.M., H. Nguyen, T.Li, L. Sajewitz, R. Robey, K.Wojikowski, and K.H. Cowan. Drug resistant breast cancer cells frequently retain expression of a functional wild-type p53 protein. Carcinogenesis **17**: 1417-1427, 1996.

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Gong, M., Cowan, K.H., **Gudas, J.** and .J.A. Moscow. Isolation and characterization of mRNA transcripts containing four different 5′ untranslated regions of the human reduced folate carrier. Gene **233**: 21- 31, 1999.

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Jeffy B.D., Chirnomas R.B., Chen E.J., **Gudas J.M.** and Romagnolo D.F. Activation of the Aromatic Hydrocarbon receptor pathway is not sufficient for transcriptional repression of BRCA-1: Requirements for metabolism of Benzo[a]pyrene to 7r,8t-Dihydroxy-9t,10-epoxy-7,8,9,10-tetrahydrobenzo[a]pyrene. Cancer Res. **62** :113-21, 2002.

Huang, S., Mills, L. Mian, B., Tellez, C., McCarthy, M., Yang, X-D., **Gudas, J.M.** and M. Bar-Eli. 2002 Fully human antibodies to IL-8 (ABX-IL8) inhibit angiogenesis, tumor growth and metastasis of human melanoma Am. J. Pathol. 161: 125- 134, 2002.

Mills, L., Tellez, C., Huang, S., Baker, C., McCarty, M., Green, L., **Gudas, J.M.**, Feng, X., and Bar-Eli, M. Fully human antibodies to MCAM/Muc18 inhibit tumor growth and metastasis of human melanoma. Cancer Res. 62: 5106-5114, 2002.

Wang, D., Scully, S., Kornuc, M., Romakrishnan, M., Sun, J., Patterson, S., **Gudas, J.M** and Theill, L. Cloning and expression of analysis of Dickkopf genes. (Manuscript submitted).

Mian, B.M., Dinney, C.P., Bermejo, C.E., Sweeney, P., Tellez, C., Yang, X-D., **Gudas, J.M.**, McConkey, D.J. and Bar-Eli, M. Fully human Anti-IL8 antibody inhibits tumor growth in orthotopic bladder cancer xenografts via downregulation of matrix metalloproteases and NF-kB. (Manuscript submitted to Clin. Cancer Res.)

PATENTS and APPLICATIONS

Feige, U., Liu, Chuan-Fa, Cheetham, J.C., Boone, T.C. and **J.M. Gudas.** US Patent application 09-563,286 Modified peptides as therapeutic agents, May 3, 2000.

Hu, S. and **Gudas, J.M.** Overexpressing cyclin D in an eukaryotic cell line. US Patent 6,210,924 B1 April 3, 2001.

Gudas, J.M., Bar-Eli, M. Antibodies directed against ABGX antigen and uses therof. US Patent application (Filed 12/14/01)

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